

Two new endemic species of *Sagina* L. (Caryophyllaceae) from Australia

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ABSTRACT

Sagina namadgi and *S. diemensis* from SE Australia are newly described and illustrated, and their ecology briefly discussed. A key to all *Sagina* spp. recorded from Australia is provided.

Introduction

Prior to about 1960, all Australian specimens of *Sagina*, apart from the predominantly coastal *S. maritima* G. Don (possibly native here) had been equated with the cosmopolitan adventives *S. apetala* Ard. or *S. procumbens* L., in the case of perennials mostly the latter. In 1962 M. Gray (*in sched.*) and other taxonomists at CANB noticed that a form of '*S. procumbens*' collected from the Brindabella Range, A.C.T. had some anomalous features. For example, seed of this taxon was quite unlike that of *S. procumbens*, being larger and much more rounded, lacking a dorsal groove, and with a glossy (not dull), colliculate (not tuberculate) testa. Following examination of further material of '*S. procumbens*', it became apparent that a long-overlooked, undescribed, indigenous taxon exists, and furthermore is quite widespread in cool-temperate SE Australia. It is here described as *S. namadgi*.

In the early 1980s another indigenous species was found, collected on and near Mt Anne, in southwestern Tasmania. This taxon has the same seed type as *S. namadgi* (although not nearly as glossy), but differs in other aspects, mainly its habit, the indumentum of its foliage, and its relatively conspicuous white flowers. It is here described as *S. diemensis*.

Taxonomy

1. *Sagina namadgi* L.G. Adams, *sp. nov.* ('sp. A' *in sched.*)

Sagina sp., N.T. Burb. & M. Gray, *Flora of the Australian Capital Territory*, p. 162 (1979).

[*Sagina procumbens sensu* J. Thomps. & M. Gray, *Telopea* 2(3): 318 (1981), *pro parte min., non* L.]

Simulans *S. procumbenti*, sed sepalis c. 1.5 mm longis, et seminibus atrofusis vel nigribus reniformibus ad subglobosis sine sulco dorsali, differt; et ab *S. diemensis* sepalis ad basim leviter rotundatis, et seminibus splendentibus, 0.4–0.5 mm longis, differt.

HOLOTYPE: Australian Capital Territory: c. 10 miles [16 km] N of Boboyan homestead, 35°43'S 149°00'E, alt. c. 1000 m, 17 Feb. 1963, L.G. Adams 539 (CANB 152061).

Perennial, entirely glabrous, with fibrous roots often adventitious from nodes. *Stems* lax, diffusely branching and often stoloniferous, 2–15 cm long; basal leaf-rossette absent at anthesis. *Leaves* sessile, linear, the apex acute or mucronulate, not aristate, 4–10 mm long, 0.3–0.5 mm wide. *Flowers* 4-merous. *Pedicels* 4–15 mm long, in fruit at first deflexed immediately below capsule, later erect. *Sepals* broad-ovate to suborbicular, \pm 1.5 mm long, with narrow scarious margins, becoming appressed to ripe fruit. *Petals*

broad-obovate, entire, white, \pm half length of sepals. *Stamens* 4 or 8. *Styles* 3 or 4. *Capsule* broad-ovoid to subglobose, 2-3 mm long, up to twice length of sepals. *Seeds* \pm glossy, dark grey or black, tumid-reniform to subglobose, not grooved dorsally, bluntly colliculate, 0.4-0.5 mm long. (Fig. 1 a-e)

DISTRIBUTION AND ECOLOGY

Sagina namadgi is indigenous to cool-temperate eastern Australia, occurring in sub-alpine flushes, sphagnum bogs and on creek margins, often in *Eucalyptus pauciflora* woodland. Recorded associated species are: *Callistemon ?pityoides*, *Leptospermum* sp., *Ranunculus pimpinellifolius*, *Plantago antarctica*, *Carex* spp., *Cyperus* sp., *Schoenus* sp., *Epilobium* sp., *Spiranthes sinensis* and *Utricularia dichotoma*. Like the adventive *Sagina* spp. it is an inconspicuous plant, no doubt often overlooked (or passed over in mistake for the naturalised perennial *S. procumbens* L., to which it bears a superficial resemblance), and thus probably more common than current records indicate.

NOTES

The new species is most readily distinguished from all others occurring in Australia by the combination of its glabrous, perennial habit, awnless leaves, the basal rosette absent at flowering, non-spreading sepals in fruit, and significantly different seeds.

ETYMOLOGY

The epithet commemorates Namadgi National Park, A.C.T., whence came the first collections to be recognised as a taxon new to science.

ADDITIONAL SPECIMENS EXAMINED

AUSTRALIAN CAPITAL TERRITORY: entrance gate, Gudgenby Station, 23 Dec. 1958, *N.T. Burbidge 6215 & M. Gray* (CANB); Murrays Gap, Bimberi Range, 12 Feb. 1961, *N.T. Burbidge 6955* (CANB).

NEW SOUTH WALES: Tia River, near Walcha., Nov. 1897, *J.H. Maiden s.n.* (NSW); Jindabyne., Jan. 1899, *J.H. Maiden & W. Forsyth s.n.* (NSW); Ben Lomond, Dec. 1899, *J.H. Maiden s.n.* (NSW); Happy Jacks Plain, headwaters of Happy Jacks River, c. 24 km S of Kiandra, 18 Jan. 1958, *J. Thompson s.n.* (NSW); Sherlock Creek, 16 km S of Captains Flat, 25 Dec. 1965, *B.G. Briggs s.n.* (NSW); Cave Creek, 29 km NNE of Kiandra, alt. 1200 m, 12 Dec. 1969, *R. Coveny 2675a & A. Rodd* (NSW); Dead Horse Gap on Jindabyne-Khancoban road, 8 km S of Mt Kosciuszko summit, 26 Feb. 1974, *B.G. Briggs 4780* (NSW).

VICTORIA: Rocky Plain, c. 24 km W of Wulgulmerang, 3 Feb. 1968, *K. Rogers s.n.* (MEL).

TASMANIA: King's Island [= King Island, 39°55'S 144°00'E], Nov. 1887, *C. Walter s.n.* (NSW); Pegg Creek, Hartwell Cove, *A. Moscal 10020* (HO, AD).

2. *Sagina diemensis* L.G. Adams, *sp. nov.* ('sp. B' in sched.)

Simulans *S. procumbenti*, sed planta plerumque glandulo-hirta ubique, petalis conspicuis quam sepalis longioribus, et seminibus sine sulco dorsali, differt; et ab *S. namadgi* sepalis ad basim saccatis porcatis, et seminibus impolitis, 0.5-0.7 mm longis, differt.

HOLOTYPE: Tasmania: crevices in dolomite outcrops, NE ridge of Mt Anne, 42°56'S 146°26'E, alt. 980 m, 31 Dec. 1984, *A.M. Buchanan 5115* (HO 88950).

Cushion-forming perennial, glandular-hairy throughout (rarely glabrous), with fibrous roots often adventitious from nodes. *Stems* lax, stoloniferous, up to 10 cm long, diffusely branching laterally from short caudex that bears a non-flowering leaf-rosette. *Leaves* sessile, linear, the apex acute or shortly mucronulate, usually glandular-ciliate, 2-10(-14) x 0.2-0.5 mm, usually with narrow scarious margins. *Flowers* 4-merous. Pedicels erect, at no time deflexed, 6-12 mm long. *Sepals* oblong-elliptic with saccate, \pm ridged base, 2-2.5 mm long, the scarious margins often purple-tinged, \pm appressed to ripe fruit. *Petals* ovate to suborbicular, entire, white, 2.5-3.5 mm long, rarely absent. *Stamens* 4 or 8. *Styles* 4. *Capsule* ovoid, 2.5-2.75 mm long, slightly longer than sepals. *Seeds* matt or scarcely glossy, dark reddish brown, oblique-reniform, not grooved dorsally, bluntly tuberculate, 0.5-0.7 mm long. (Fig. 1 f-j)

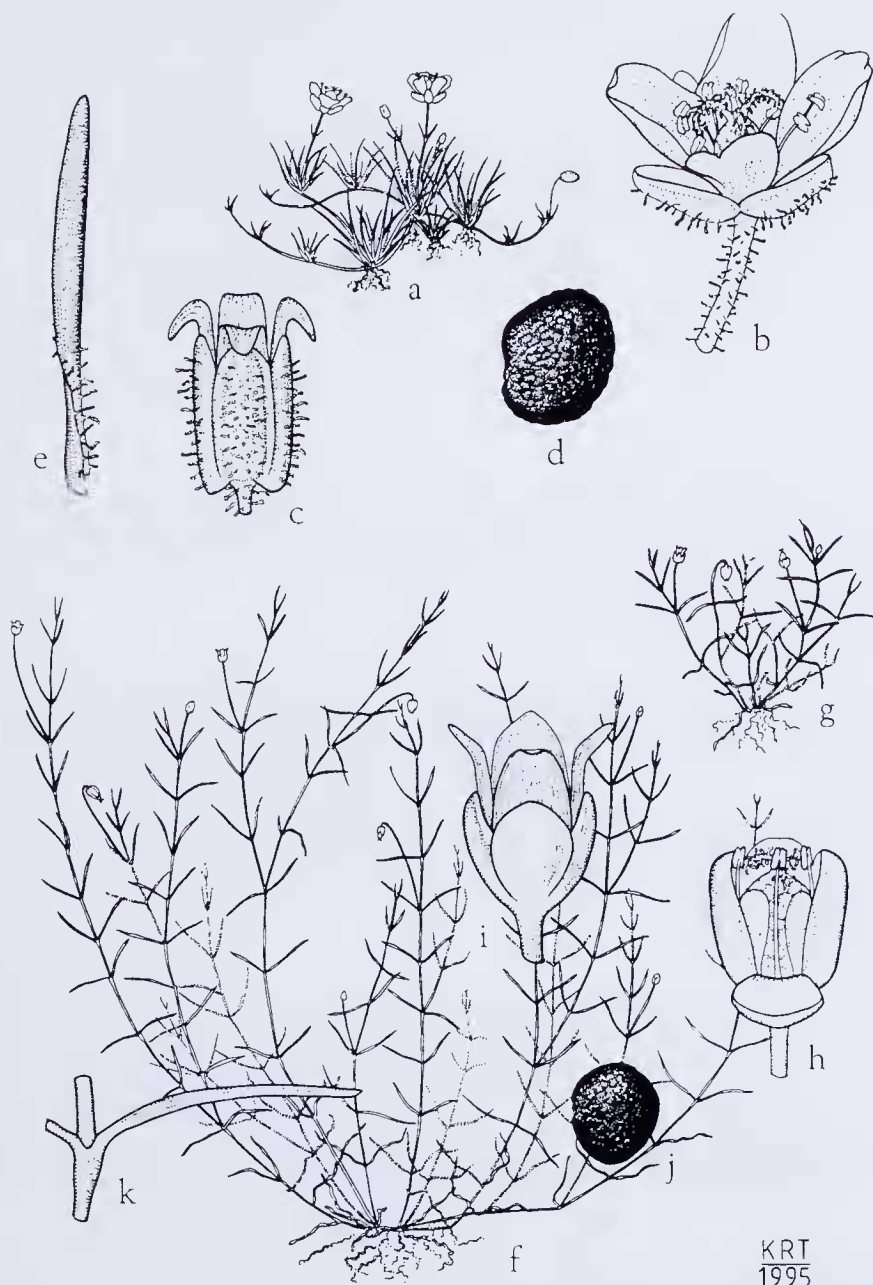


Fig. 1. a-e *Sagina diemensis*. a - habit x1. b - flower x6. c - leaf x5. d - seed x30. e - dehiscent capsule and sepals x8. f-j *Sagina namadgi*. f - habit (lax plant) x1. g - habit (small plant) x1. h - flower, with sepal drawn back to show internal organs x15. i - dehiscent capsule and sepals x10. j - seed x30. k - leaf and node x5.

DISTRIBUTION AND ECOLOGY

Sagina diemensis is known only from the immediate vicinity of Mt Anne and headwaters of the Weld River, southwestern Tasmania, occurring on dolomite outcrops. Recorded associated species are *Danthonia diemenica*, *Isolepis* sp., *Oreomyrrhis gunnii* and *Oreoporanthera petalifera*.

NOTES

Sagina diemensis is readily distinguished from other *Sagina* species by its persistent basal leaf-rosette, usually strongly glandularly-hairy foliage and inflorescence, and when in flower, by the saccate base of the sepals and the relatively conspicuous white corolla. A single collection (*J. Davies 30*) from the same area as the type is entirely glabrous and lacks petals; it is otherwise closely similar to typical *S. diemensis* (particularly in the size, shape and ornamentation of the seeds) and seems to be an aberrant form of it.

ETYMOLOGY

The epithet refers to Van Diemen's Land, the early name for Tasmania, where the taxon seems to be endemic.

ADDITIONAL SPECIMENS EXAMINED

TASMANIA: Mt Anne, *J.B. Davies DN 547465* (HO); Weld Arch, Weld River, alt. 360 m, 17 Jan. 1988, *D. Ziegeler s.n.* (HO); Mt Anne, NE ridge, alt. 980 m, 30 Dec. 1984, *J. Davies 30* (HO); *ibid.*, alt. 980 m, 31 Dec. 1984, *A.M. Buchanan 5104* (HO); *ibid.*, alt. 850 m, 20 Jan. 1990, *L. Gilfedder ANBG 2228* (CBG).

KEY TO SPECIES IN AUSTRALIA

- 1 Seeds with dorsal margin flattened or grooved 2
- 1: Seeds with dorsal margin rounded, never flattened or grooved 4
- 2 Perennial with fibrous roots, often adventitious from nodes; stems diffusely branching with sterile axillary shoots common, often mat-forming; sepals in mature fruit broad-ovate to suborbicular **Sagina procumbens*
- 2: Annual with slender branching tap-root; stems erect or ascending, lacking sterile axillary shoots and rarely mat-forming; sepals in mature fruit ovate 3
- 3 Leaves (at least the upper) often basally ciliate, the apex subulate, aristate; inflorescence often glandular; sepals in fruit spreading, usually distinctly shorter than capsule *Sagina apetala*
- 3: Leaves never ciliate, the apex obtuse or acute, often mucronulate but not aristate; inflorescence never glandular; sepals in fruit erect, \pm equalling capsule (?) *Sagina maritima*
- 4 Plant glandular-hairy throughout (rarely glabrous); basal leaf-rosette persistent; sepals 2-2.5 mm long with saccate, \pm ridged base, a little shorter than mature capsule; petals distinctly longer than sepals; seeds \pm matt, dark reddish brown, 0.5-0.7 mm long *Sagina diemensis*
- 4: Plant always glabrous; basal leaf-rosette absent at flowering; sepals \pm 1.5 mm long with smoothly rounded base, much shorter than mature capsule; petals much shorter than sepals; seeds glossy, dark grey or black, 0.4-0.5 mm long *Sagina namadgi*

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